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(71)Applicant : CANON INC

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(72)Inventor : YAGI TAKAYUKI

FUSHIMI MASAHIRO

SHIMADA YASUHIRO

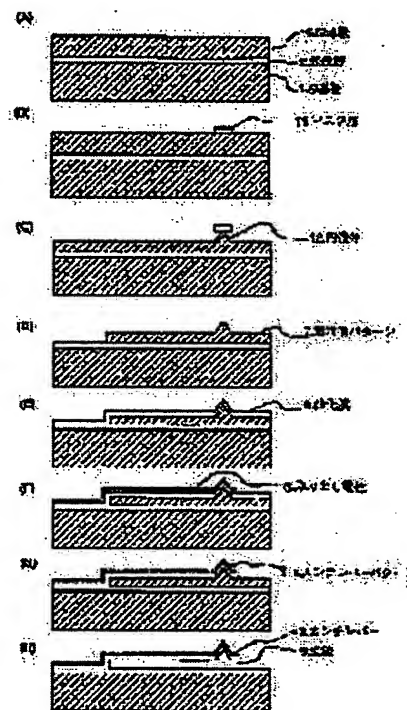
(54) FORMATION OF CANTILEVER HAVING PROBE

(57)Abstract:

PURPOSE: To keep resonance frequency high and to enhance production yield by forming a probe pattern on an, SOT substrate at a predetermined position and forming a cantilever pattern as a silicon oxide film and removing the Si membrane of a non-oxidized part.

CONSTITUTION: An Si substrate 1 and an SOI substrate consisting of an insulating layer 2 composed of a silicon oxide film and an Si membrane 6 are used and, at first, a mask layer 11 is formed on the membrane 6 and, thereafter, a conical body 12 becoming a probe pattern is formed and further formed into a sacrifice layer pattern 7 by a semiconductor photolithography process. This pattern 7 is oxidized to form an oxide film 8 becoming a cantilever 3 and a taking-out electrode 5 is

formed thereon by an electron beam vapor deposition method. Next, an oxide film 8 is patterned to form a cantilever pattern 3a and the pattern 7 is subjected to plasma etching to form a gap 9. The cavitation of a probe realizes low mass and resonance frequency can be enhanced and the yield at the time of the removal of a sacrifice layer can be enhanced.



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